

## CLAIMS

What is claimed is:

- 1 1. A method of providing content from a network to a wireless device, the method  
2 comprising:  
3 receiving the content from a resource on the network according to a  
4 hypermedia protocol, wherein the wireless device is not compliant with the  
5 hypermedia protocol; and  
6 converting the content to a message compliant with a message requirement  
7 of the wireless device.
- 1 2. A method as recited in claim 1, wherein said converting comprises generating  
2 an SMS message including the content.
- 1 3. A method as recited in claim 2, further comprising transmitting the message to  
2 an SMS Center (SMSC), for subsequent transmission by the SMSC to the wireless  
3 device over a wireless network.
- 1 4. A method as recited in claim 3, wherein said converting further comprises  
2 translating the content from a first content-type to a second content-type.
- 1 5. A method as recited in claim 4, wherein the first content-type is a mark-up  
2 language, and the second content-type is plain text.

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1 6. A method as recited in claim 3, wherein said converting further comprises  
2 transcoding the content from a first character set to a second character set.

1 7. A method as recited in claim 3, wherein said converting further comprises:  
2 translating the content from a content-type used by the resource on the  
3 network to a content-type used by the SMSC; and  
4 transcoding the content from a character set used by the resource on the  
5 network to a character set used by the SMSC.

1 8. A method as recited in claim 4, wherein the first content-type is a mark-up  
2 language, and the second content-type is plain text.

1 9. A method as recited in claim 1, wherein said receiving the content from a  
2 resource on the network is responsive to a request for the content from the  
3 wireless device.

1 10. A method as recited in claim 9, wherein the request is an SMS request.

1 11. A method as recited in claim 10, further comprising, prior to said receiving the  
2 content:

3 converting the request to be compliant with the hypermedia protocol; and  
4 and transmitting the request to the resource on the network;



1 17. A method as recited in claim 13, further comprising converting the message to  
2 comply with a communication requirement of the network resource prior to said  
3 identifying.

1 18. A method as recited in claim 17, wherein said retrieving comprises retrieving  
2 the content using a protocol used by the network resource but not by the wireless  
3 device.

1 19. A method as recited in claim 17, wherein the protocol is a hypermedia based  
2 protocol.

1 20. A method as recited in claim 19, wherein the message is an SMS message, and  
2 the response is an SMS response.

21. A method as recited in claim 13, wherein said converting the content into a response compliant with a requirement of the wireless device comprises:

- translating the content from a content-type used by the network resource to a content-type associated with the wireless device; and
- transcoding the content from a character set used by the network resource to a character set associated with the wireless device.

1 22. A method as recited in claim 21, wherein the message is an SMS message, and  
2 the response is an SMS response.

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1 23. A method as recited in claim 13, further comprising converting the message to  
2 comply with a requirement of the network resource prior to said identifying;

3 wherein said retrieving comprises retrieving the content using a protocol  
4 used by the network resource but not by the wireless device; and

5 wherein said converting the content into a response compliant with a  
6 requirement of the wireless device comprises transcoding the content into a  
7 character set compliant with the requirement of the wireless device

1 24. A method as recited in claim 23, wherein the message is an SMS message, the  
2 protocol is a hypermedia based protocol, and the response is an SMS response.

1 25. A method of providing content from a network to a wireless device, the  
2 method comprising:

3 receiving a request for content from a message service center providing  
4 message services to the wireless device;

5 generating a proxy request, the proxy request including an identifier  
6 identifying a network resource capable of providing the content; and

7 converting the content to a message compliant to a message requirement of  
8 the wireless device after the content is retrieved from the network resource, the  
9 message for subsequent delivery by the message service center to the wireless  
10 device.

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1 26. A method as recited in claim 25, wherein the request is an SMS request and  
2 the message service center is an SMS Center (SMSC).

1 27. A method as recited in claim 26, wherein said generating a proxy request  
2 comprises performing a hypermedia operation.

1 28. A method as recited in claim 27, wherein said generating a proxy request  
2 comprises:

3 identifying a keyword associated with the request; and  
4 mapping the keyword to an identifier of the network resource.

1 29. A method as recited in claim 28, further comprising maintaining a mapping of  
2 keywords to network resource identifiers.

1 30. A method as recited in claim 25, wherein said converting comprises:  
2 translating the content from a content-type used by the network resource to  
3 a content-type used by the message service center; and  
4 transcoding the content from a character set used by the network resource  
5 to a character set used by the message service center.

1 31. A method of providing content from a network to a wireless device, the  
2 method comprising:  
3 receiving a message based on a request from the wireless device, the

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4 message conforming to a first protocol and a first character set implemented by  
5 the wireless device;  
6 transcoding the message into a second character set of the network;  
7 identifying a keyword in the message;  
8 mapping the keyword to a network resource on the network;  
9 retrieving, from the network resource, content in the second character set  
10 based on the keyword, using a second protocol implemented by the network;  
11 translating the content from a content-type used by the application to a  
12 content-type used by the wireless device;  
13 transcoding the content into the first character set; and  
14 providing the content to the wireless device in the first character set using  
15 the first protocol.

1 32. A method as recited in claim 31, wherein:

2 the first protocol is SMS; and

3 the second protocol is a hypermedia based transport protocol.

1 33. A method as recited in claim 31, wherein:

2 the content-type used by the application is a mark-up language; and

3 the content-type used by the wireless device is plain text.

1 34. A method of providing content from a network to a wireless device, the

2 method comprising:

3 receiving a message based on a request from the wireless device;  
4 identifying a keyword in the message;  
5 mapping the keyword to a network resource;  
6 retrieving content from the network resource based on the keyword;  
7 translating the content into a content-type associated with the wireless  
8 device; and  
9 transcoding the content into a character set compliant with a message  
10 requirement of the wireless device.

1 35. A method as recited in claim 34, further comprising providing the content to a  
2 message center using said character set, for subsequent transmission to the  
3 wireless device.

1 36. A method as recited in claim 34, wherein the message comprises an SMS  
2 message.

1 37. A method as recited in claim 34, wherein said providing comprises providing  
2 the content to the wireless device in an SMS response.

1 38. A method as recited in claim 34, wherein said mapping comprises mapping  
2 the keyword to a URL associated with the network resource.

1 39. A method as recited in claim 34, wherein said retrieving comprises retrieving

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2 the content using at least one HTTP transaction.

1 40. A method as recited in claim 39, wherein the HTTP transaction comprises an  
2 HTTP POST operation.

1 41. A method of providing content from a network to a wireless device, the  
2 method comprising:

3 maintaining a mapping of keywords to network resources;

4 receiving a first SMS message from the wireless device, the first SMS  
5 message transmitted on a wireless network;

6 identifying a keyword in the first SMS message;

7 using the mapping to determine a network resource associated with the  
8 keyword;

9 retrieving content from the network resource using an HTTP transaction;

10 translating the content into a different content type;

11 transcoding the content into a different character set; and

12 providing the content to an SMS Center in a second SMS message, for  
13 transmission to the wireless device.

1 42. A method as recited in claim 41, wherein said using the mapping to determine  
2 a network resource associated with the keyword comprises using the mapping to  
3 determine a URL associated with the keyword.

1 43. A method of providing content maintained remotely on a network to a  
2 wireless device, the method comprising:  
3 receiving an SMS request for the content from the wireless device via an  
4 SMS Center (SMSC), the SMS request transmitted on a wireless network;  
5 transcoding the SMS request from a plain text character set to a mark-up  
6 language character set;  
7 extracting a keyword from the transcoded request;  
8 maintaining a keyword-to-URL mapping;  
9 looking up the keyword in the keyword-to-URL mapping to identify a URL  
10 associated with the keyword, the URL associated with an application capable of  
11 providing said content;  
12 constructing an HTTP POST operation containing the keyword and the  
13 URL;  
14 submitting the HTTP POST operation to the application over a wireline  
15 network;  
16 receiving an HTTP response from the application in response to the POST  
17 operation over the wireline network, the HTTP response containing said content;  
18 extracting the content from the HTTP response;  
19 translating the content from a mark-up language to plain text;  
20 transcoding the content from a character set of the application to a character  
21 set of the SMSC; and  
22 sending the translated and transcoded content in an SMS response to the  
23 wireless device via the SMSC.

1 44. A method as recited in claim 43, further comprising providing a Web site user  
2 interface to allow updating of the keyword-to-URL mapping.

1 45. A method of providing content maintained remotely on a network to a  
2 wireless device, the method comprising:

3 receiving an HTTP message containing the content from an application,

4 wherein the HTTP message is not in response to a request by the wireless device;

5 translating the content from a content-type used by the application to a  
6 content-type used by the wireless device;

7 transcoding the content from a character set used by the application to a  
8 character set used by the wireless device; and

9 sending an SMS message containing the translated and transcoded content  
10 to an SMS center, for delivery to the wireless device.

1 46. A processing system coupled to a network and configured to provide content  
2 from the network to a wireless device, the processing system comprising:

3 a processor; and

4 a storage facility coupled to the processor and containing instructions  
5 executable by the processor which configure the processing system to

6 receive content from a resource on the network according to a  
7 hypermedia protocol, wherein the wireless device is not compliant with the  
8 hypermedia protocol; and

9 convert the content to a message compliant with a message  
10 requirement of the wireless device.

1 47. A machine-readable program storage medium tangibly embodying a sequence  
2 of instructions executable by a machine to perform a method comprising:  
3 receiving a message based on a request from a wireless device;  
4 identifying a keyword in the message;  
5 mapping the keyword to a network resource on the network;  
6 retrieving content from the network resource based on the keyword;  
7 translating the content from a content-type of the application to a content-  
8 type usable by the wireless device; and  
9 transcoding the content into a character set compliant with a message  
10 requirement of the wireless device.

1 48. A machine-readable program storage medium as recited in claim 47, wherein  
2 the method further comprises providing the content to a message center using  
3 said character set, for subsequent transmission to the wireless device.

1 49. A machine-readable program storage medium as recited in claim 47, wherein  
2 the message comprises an SMS message.

1 50. A machine-readable program storage medium as recited in claim 47, wherein  
2 said providing comprises providing the content to the wireless device in an SMS

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3 response.

1 51. A machine-readable program storage medium as recited in claim 47, wherein  
2 said mapping comprises mapping the keyword to a URL associated with the  
3 network resource.

1 52. A machine-readable program storage medium as recited in claim 47, wherein  
2 said retrieving comprises retrieving the content using at least one HTTP  
3 transaction.

1 53. A machine-readable program storage medium as recited in claim 52, wherein  
2 the HTTP transaction comprises an HTTP POST operation.

1 54. An apparatus for providing content from a network to a wireless device, the  
2 apparatus comprising:

3 means for receiving a message based on a request from the wireless device,  
4 the message conforming to a first protocol and a first character set;

5 means for transcoding the message into a second character set;

6 means for identifying a keyword in the message;

7 means for mapping the keyword to a network resource;

8 means for retrieving, from the network resource, content in the second  
9 character set based on the keyword, using a second protocol;

10 means for translating the content from a content-type of the application to a

11 content-type usable by the wireless device;

12 means for transcoding the content into the first character set; and

13 means for providing the content to the wireless device in the first character  
14 set using the first protocol.

1 55. An apparatus for providing content maintained remotely on a network to a  
2 wireless device, the apparatus comprising:

3 means for receiving an SMS request for the content from the wireless device  
4 via an SMS center, the SMS request transmitted on a wireless network;

5 means for transcoding the SMS request from a first character set to a second  
6 language character set;

7 means for extracting a keyword from the transcoded request;

8 means for maintaining a keyword-to-URL mapping;

9 means for looking up the keyword in the keyword-to-URL mapping to  
10 identify a URL associated with the keyword, the URL associated with an  
11 application capable of providing said content;

12 means for constructing an HTTP POST operation containing the keyword  
13 and the URL;

14 means for submitting the HTTP POST operation to the application over a  
15 wireline network;

16 means for receiving an HTTP response from the application in response to  
17 the POST operation over the wireline network, the HTTP response containing said  
18 content;

- 19 means for extracting the content from the HTTP response;
- 20 means for translating the content from a content-type of the application to a
- 21 content-type usable by the SMSC;
- 22 means for transcoding the content from the second character set the first
- 23 character set; and
- 24 means for sending the transcoded content in an SMS response to the
- 25 wireless device via the SMSC.

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